Title: PROTEIN TENHANCES EXPRESSION OF POTASSIU ANNELS ON CELL SUN ACES AND NUCLEIC ACIDS THAT ENCODE THE SAME

Inventors Name: Brown, et al.
Attorney Docket Number: 222884/04066

Fig. 1

aa 1	KChAP	575	
219 bp			980 bp
KchAP-Y	W310	575	
Kvα/β binding domain	W310	L407	
fragment for Ab production		L407	575

indysdy 4 celso

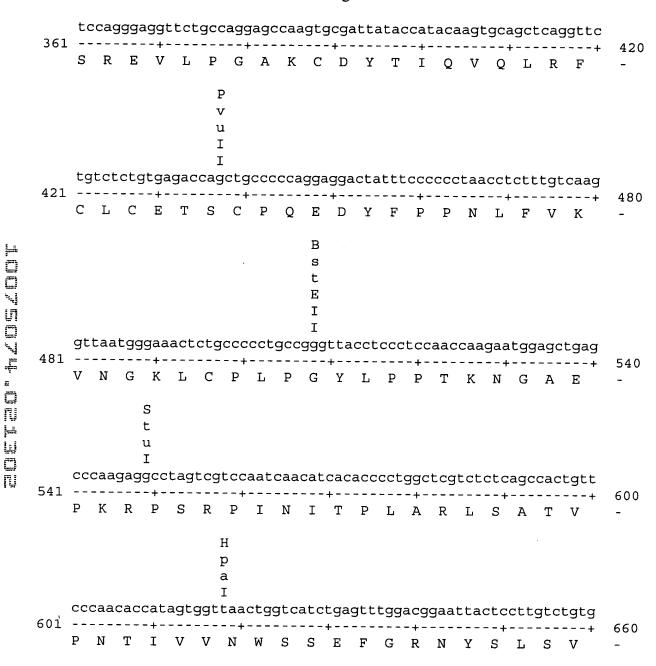
PROTEIN T ENHANCES EXPRESSION OF POTASSIU LANNEI CELL SUR-ACES AND NUCLEIC ACIDS THAT ENCODE THE SAME Inventors Name: Brown, et al. Attorney Docket Number: 222884/04066 IANNELS ON

Fig. 2A

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16 mg mg mg mg mg	81 41	M ta	H Cga	P agt	-+- P ctac	cgg.	P P aga	+ Q gct	P cat	V E a g I	gcc	+ P gac +	D Cac	V Cat	T T	M gtc	K	+ P ctc	L Cag	P tca	F F gagg	240
16 mg mg mg mg mg		M	H H cga	P P	-+- P	L	P	+ Q	P P	V E a g I	H H	+ P	D D	v V	T T	M M	K K	P P		P	F F	-
16 mg mg mg mg mg		M ta	H Cga	P agt	-+- P ctac	cgg.	P P aga	+ Q gct	P cat	V E a g I	gcc	+ P gac +	D Cac	V Cat	T T	M S	K Cace	+ P ctc	L Cag	P tca	F F gagg	-
16 mg mg mg mg mg		M ta	H Cga	P agt	-+- P ctac	cgg.	P P aga	+ Q gct	P cat	V E a g I	gcc	+ P gac +	D Cac	V Cat	tgcç	M M S	K K T	+ P ctc	L Cag	P tca	F F gagg	-
	41	taY	H Cga E	P agt	-+- P cta -+- Y	L cggg	agaq	get. L	P Cato	V E a g I ccg R	gcc p	+ P gac + T	D D	V Cct	tgco A F V	M M	K K Cacco	P ctcc S	L Cag	P tcag	F gagg + R	-
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Fig. 2B



IANNELS ON **Z** SAME

Fig. 2C

	661	t <i>a</i>	ıcct	zggt	gag	ggca	ıgt t	gad	ctgo	p s t I						agci	ccaç	gago	ccaa	aggg	B s a W I	
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		Т	V	P	C	R		L	T	С		Н	L	Q	S	F		Α			Y	-
F.	901	ct	aca	gat	gaa	tga	gaa	aaa	gcc	aac	atg	gac	gtg	ccc	tgt	gtg	tga	caa	gaa	ggc	tccc	
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T ENHANCES EXPRESSION OF POTASSIU ANNELS ON CELL SUR-ACES AND NUCLEIC ACIDS THAT ENCODE THE SAME

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Fig. 2D

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1 Μ Ι ${\tt tccgaggtttgccccccaccagggtatggcttggatggtctccagtatagcccagtccag}$ 1140 S E V C P P P G Y G L D G L Q Y S P V Q gagggaaatcagtcagagaataagaagggttgaagtcattgacttgacaatcgaaagc 1200 EGNQSENKKRVEVIDLTIES В g 1 Ι Ι ${\tt tcatcagatgaggaagatctgccccaccaagaagcactgccctgttacctcggctgcc}$ S S D E E D L P P T K K H C P V T S A A В s Ε attccagcccttcctggaagcaaaggagccctgacctctggtcaccagccgtcttcggtg 1261-----+ 1320 I P A L P G S K G A L T S G H Q P S S V ctgcggagccctgcaatgggtacactgggcagtgatttcctgtctagtctcccactacat 1321-------1380 LRSPAMGTLGSDFLSSLPLH 1381------1440 EYPPAFPLGADIQGLDLFSF $\verb"cttcagactgagagtcagcactacagcccttcagttatcacttcactagatgagcaggac"$ 1500 LQTESQHYSPSVITSLDEQD

1975074.02130E

Fig. 2E

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Nar			coI			deI			heI			otI			ruI			ĪsiI		PmlI
Pvu			acII			alI			auI		S	caI		S	fiI		Si	maI		SnaBI
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Tile: PROTEIN TENHANCES EXPRESSION OF POTASSIU LANNELS OF CELL SUR-ACES AND NUCLEIC ACIDS THAT ENCODE SAME

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Fig. 3A

Α р a atgaagatcaaagagctttaccgacgacgctttccccggaaqaccctqqqqccctctqat 1 -----+ MKIKELYRRRFPRKTLGPSD ctctcccttctctttgccccctggcacctctcctgtaggctcccctggtcctctagct 61 -----+---+-----+-----+ 120 L S L L S L P P G T S P V G S P G P L A Α p а cccattcccccaacgctgttggcccctggcaccctgctgggccccaagcgtgaggtggac 180 PIPPTLLAPGTLLGPKREVD atgcacccccctctgccccagcctgtgcaccctgatgtcaccatgaaaccattgcccttc 181 -----+ 240 M H P P L P Q P V H P D V T M K P L P F tatgaagtctatggggagctcatccggcccaccaccttgcatccacttctagccagcgg 300 Y E V Y G E L I R P T T L A S T S S O R tttgaggaagcgcactttacctttgccctcacaccccagcaagtgcagcagattcttaca 301 ------360 F E E A H F T F A L T P O O V O O I L T tccagagaggttctgccaggagccaaatgtgattataccatacaggtgcagctaaggttc 361 -----+ 420 S R E V L P G A K C D Y T I O V O L R F P ν u Ι Ι tgtctctgtgagaccagctgccccaggaagattattttcccccaacctctttqtcaaq C L C E T S C P Q E D Y F P P N L F V K

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PROTEIN T ENHANCES EXPRESSION OF POTASSIU IANNELS ON CELL SUR-ACES AND NUCLEIC ACIDS THAT ENCODE THE SAME

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Fig. 3B

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	V	N	G	K	L	С	P	Ļ	P	G	Y	L	P	P	Т	K	N	G	A	E	-
	CC	caa	gag	gcc	cag	lace	jccc	cat	caa	acat	cac	acc	cct	ggc	tcg	act	ctc	ago	cac	tgtt	
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661		cct 	ggt 	gag -+-	gca 	gtt 	gac +	tgc 	agg		:cct	tct	aca 	aaa -+-	act 	cag	agc	aaa 	 999	tatc	720
661			ggt V	- + -	gca Q		+		agg G	-	+		-	- + -			agc + A			tatc + I	720 -
661	 У		v	-+- R	Q	 L	+ T	 A	G	Т	+ L	 L	Q	-+- K	 L	R	+ A	 К	G	+	. — -
661 721	cg 	L gaa	V ccc	-+- R aga -+-	Q Cca	L ctc	+ gcg	A ggc	G act	T gat	+ L caa +	L gga	Q Q gaa	-+- K att -+-	L gac	R tgc	A A tga	K CCC	G tga	I cagt	. — -
	 У		v	-+- R	Q	 L	+ T	A ggc	G	Т	+ L caa +	 L	Q	-+- K att -+-	 L	R	A A tga	 К	G	+ I	-
721	y cg R	L gaa N	V ccc 	-+- R aga -+- D	Q cca H	L ctc	T gcg + R	A ggc A	G act L	T gat	L caa + K	L gga E	Q gaa K gtg	-+- K att -+- L	L gac T	R tgc A	+ A tga + D	K CCC P	G tga D	I cagt	780
	cg R ga	L gaa N	ggc 	-+- R aga -+- D cac	Q cca H tac	L ctc S aag	T gcg + R	A ggc A ccg	G act L	T gat	L caa + K act	L gga E cat	Q gaa K gtg	-+- K att -+- L ccc	L gac T gct	R tgc A agg	tga + D gaa	CCC P gat	G tga D gcg	cagt+ S cctg	780
721	y cg R	L gaa N ggt	V ccc 	-+- R aga -+- D	Q cca H	L ctc	T gcg + R	A ggc A	G act L	T gat	L caa + K	L gga E	Q gaa K gtg	-+- K att -+- L	L gac T	R tgc A	+ A tga + D	K CCC P	G tga D	I cagt + S	- 780 -
721	cg R ga	L gaa N ggt	ggc 	-+- R aga -+- D cac	Q cca H tac	L ctc S aag	T gcg + R	A ggc A ccg	G act L	T gat	L caa + K act	L gga E cat	Q gaa K gtg C	-+- K att -+- L ccc	L gac T gct	R tgc A agg	tga + D gaa	CCC P gat	G tga D gcg	cagt+ S cctg	- 780 -
721	cg R ga	L gaa N ggt	ggc 	-+- R aga -+- D cac	Q cca H tac	L ctc S aag	T gcg + R	A ggc A ccg	G act L	T gat	L caa + K act	L gga E cat	gaa K gtg C	-+- K att -+- L ccc	L gac T gct	R tgc A agg	tga + D gaa	CCC P gat	G tga D gcg	cagt+ S cctg	- 780 -
721	cg R ga E	L gaa N ggt V	V ccc P ggc A	-+- R aga -+- D cac -+- T	Q cca H tac	ctc S aag	T gcg + R tct + L	A ggc A ccg	G Gact L ggt V	T gat I gtc	L caaa + K act + L	L gga E cat	Q gaaa K gtg C P s t I	-+- K att -+- L ccc -+- P	gac T gct L	R tgc A aggg G	+ A tga + D gaa + K	K ccc P gat	G tga D gcg R	cagt+ S cctg+ L	- 780 -
721	cg R ga E	L gaa N ggt V	V ccc P ggc A	-+- R aga -+- D cac -+- T	Q cca H tac	ctc S aag	T gcg + R tct + L	A ggc A ccg R	G Gact L ggt V	T gat I gtc	L caaa + K act + L	L gga E cat	Q gaaa K gtg C P s t I	-+- K att -+- L ccc -+- P	gac T gct L	R tgc A aggg G	+ A tga + D gaa + K	K ccc P gat	G tga D gcg R	cagt+ S cctg	780 - 840 -
721	cg R ga E	L gaa N ggt V	V ccc P ggc A	-+- R aga -+- D cac -+- T	Q cca H tac	ctc S aag	T gcg + R tct + L	A ggc A ccg R	G Gact L ggt V	T gat I gtc	L caaa + K act + L	L gga E cat	Q gaaa K gtg C P s t I	-+- K att -+- L ccc -+- P	gac T gct L	R tgc A aggg G	+ A tga + D gaa + K	K ccc P gat	G tga D gcg R	cagt+ S cctg+ L	- 780 -
721	cg R ga E	L gaa N ggt V	CCC	-+- R aga -+- D cac -+- T	Q cca H tac T	ctc S aag S	T gcg+ R tct L cct.	A ggc A ccg R	G G act	gat I gtc S	L Caa + K act + L Cca	gga E Cat M	gaaa	att -+- L ccc -+- P gag	gac T gct L	R tgc A agg G	tga + D gaa+ K	K ccc P gat M	G tga D gcg R	cagt+ S cctg+ L ttat+ Y	780 - 840 -
721	cg R ga E	L gaa N ggt V	CCC	-+- R aga -+- D cac -+- T	Q cca H tac T	ctc S aag S	T gcg+ R tct L cct.	A ggc A ccg R	G G act	gat I gtc S	L Caa + K act + L Cca	gga E Cat M	gaaa	att -+- L ccc -+- P gag	gac T gct L	R tgc A agg G	tga + D gaa+ K	K ccc P gat M	G tga D gcg R	cagt+ S cctg+ L	780 - 840 -

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Fig. 3C

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t	ctga	aggt	ttg	ccc	ccc	gcc	agg	I gta	tgg	gct	gga	tgg	cct	cca	gta	caq	ccc	aqt	ccag
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g	3999	jaga	tcc	atc	aga	gaa	taa						tat	tga	ctt	gac	aat	aga	aagc
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	cato S	aga D	tga -+- E	gga E	gga D	tct + L	gcc P	ccci 	tace T	caa + K	gaa K	дса Н	ctg -+- C	ttc S	tgt V	caco + T	S S	agc A	+ A
01- S	S	D	-+- E	 E	D	+ L	P	P	T	+ K	 K	н	-+- C	s	V	T	s	 A	+ A
01- S a1	S	D ggc	-+- E cct	E acc	D D tgg	+ L aag	P caaa	P agga	T agt	+ K cct:	K gac	H atc	-+- C tgg	S cca	V Cca	T gcca	s atc	A Ctc	A A ggtg
01- S a1	S	D ggc	-+- E cct	E acc	D D tgg	+ L aag	P caaa	P agga	T agt	+ K cct:	K gac	H atc	-+- C tgg	S cca	V CCa	T gcca	s atc	A Ctc	+ A ggtg
01- S at 61- I	S cccc P	D ggc A	-+- E cct -+- L	E acc P	D tgg G	+ L aag + S	P caaa K K	P agga G G	T agto V	H K cct: H L	K gac T	H atc S	-+- C tgg -+- G	S cca H	V ccag	T gcca P	s atc s	A ctc S	+ A ggtg + V
01- S at 51- I ct	S cccc P	ggc A	-+- E cct -+- L	E acc P	D tgg G G	+ L aag + S	P caaa K K	P agga G G	T agto V	K cct + L	K gac T T	H atc S	-+- C tgg -+- G	S cca H	V ccaç Q cagt	T gcca P	s atc	A ctc S	A ggtg + V acat
01 S at 51 I ct 21	S CCCC P Eaag	ggc A gag	-+- E cct -+- L ccc -+-	E acc P tgc 	tgg G tat	+ L aag + S ggg	P caaa K cacq	P agga G G gttg	T agto V gggt	K cct; + L tgg; +	gac T T gga	H atc S ttt	tgg -+- G ccts	s cca H gtc	V ccag Q cagt	T geca P ceta	s atc s ccc	A ctc S act	ggtg + V acat H
at I - I I Ct I - L Ga	S cccc P caag R	ggc A gag S	-+- E cct -+- L ccc -+- P	E acc P tgc A	tgg G tate	+ L aag + S ggg	P caaa K cacq	P agga G gttg	T agto V gggt G	K cct; + L tgg; +	gac gac T gga D	H atc S ttt	tggg -+- G cctg -+- L	s cca H gtc S	V ccag Q cagt	T gcca+- P cctc	s atc s ccc	A ctc S act	A ggtg + V acat

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Fig. 3D

c 1-	ttc	agad	caga	ıgaç	jtca	ıgca	cta	itgg	lacc	ctc	tgt	cat	cac	ctc	act	taga	tga	aca	ggat	
L	Q	Т	E	S	Q	Н	Y	G	P	s	V	I	T	s	L	D	Е	Q	D	
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	ccc	ttgg	gcca	ctt	ctt	cca	.gta	.ccg	agg	gac	ccc	ttc	tca	ctt	tct	-999	_	act	ggcc	
-1(A	 L	G	- + -	F	F	+ Q	Y	 R	 G	+ T	P	s	-+- H	 F	 Ъ	+ G	 Р	L	+ A	
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P		L	Ğ	S	S	Н	С	S	Α	Т	Р	Α	P	P	P	G	R	V	S	
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a 1-	gcai	tgt 	.ggc	ccc	tgg	999 	ggc +	ctt 	gag 	gga +	999	gca 	tgg -+-	agg 	acc	cct +	gcc	ctc	aggt +	
S	I	V	A	P	G	G	A	L	R	E	G	H	G	G	P	L	P	S	G	
	cct	cttt	gac	tgg	ctg	tcg	gtc	aga	cat	cat	ttc	cct	gga	ctg	a					
1- P	s.	 L	-+- T	 G		+ R	 S	 D	 I	+ I	 S	 L	-+- D	- - -	-	172 -	5			
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.pa	ſ	Ba	ımH	T	R	aW]	Γ	R	stEII	ſ	N	VarI		p.	flM	T		PstI		P
aul		Ъ.		•		,	•	Δ.			1	1411		•	11111	•		LULI		•
ym	es th	at do	not	cut:																
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lot			ndII IruI	1		lpaI VsiI			pnI mlI			IluI 'vuI			lcol acI			NdeI SalI		1
SfiI		S	maI		Sr	naBI		S	peI		S	spI		S	StuI		7	KbaI		X

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PROTEIN AT ENHANCES EXPRESSION OF POTASS CHANNELS ON CELL SURFACES AND NUCLEIC ACIDS THAT ENCODE THE SAME

Inventors Name: Brown, et al. Attorney Docket Number: 222884/04066

Fig. 4

]	MKIKELYRRRFPRKTLGPSDLSLLSLPPGTSPVGSPGPLAPIPPTLLAPG	50
1	MKIKELYRRFPRKTLGPSDLSLLSLPPGTSPVGSPSPLASIPPTLLTPG	50
51 51		100
101		150 150
151 151	DYFPPNLFVKVNGKLCPLPGYLPPTKNGAEPKRPSRPINITPLARLSATV	200
201	PNTIVVNWSSEFGRNYSLSVYLVRQLTAGTLLQKLRAKGIRNPDHSRALI.	250 250
251 251	KEKLTADPDSEVATTSLRVSLMCPLGKMRLTVPCRALTCAHLQSFDAALY	300 300
301 301		35 _. 0
351 351		400 400
	SSDEEDLPPTKKHCSVTSAAIPALPGSKGVLTSGHQPSSVLRSPAMGTLG	
451 451		500
501 501	ALGHFFQYRGTPSHFLGPLAPTLGSSHCSATPAPPPGRVSSIVAPGGALR50 .	
551 551	EGHGGPLPSGPSLTGCRSDIISLD* 575	